Team-Based Virtual International Interactions in STEM Courses
Interface - *Better Together: Unstoppable Student Teams*
*April 14-15, 2021*
Classes I teach... [hard science courses]

• APK 2105c Applied Human Physiology with Laboratory (>260 students)
• APK 3200 Motor Learning (1-2 sections of up to 50 students)
• APK 4115 Neuromuscular Aspects of Exercise (1-2 sections of 50 students)
• PET 5936 Applied Data Science & Analytics in Human Performance (online, 1-2 sections of up to 25 students)
• HLP 6535 Graduate Research Methods (online, 1-2 sections of up to 25 students)
Creating Global Communities in Undergraduate STEM

- Applied Physiology and Kinesiology Department
  - APK 4115: Neuromuscular Aspects of Exercise

**Goals**

- Create an internationalized curriculum in my classroom
  - Imperative for development of skills across different intellectual domains
    - Lacking with the trend toward STEM degrees over other subjects
- Teach the relevant physiological content
  - Pre-professional
- Develop professional skills
  - Integrate global dimensions to prepare students to perform in an international and multicultural context
  - Pre-internship
Method
Weekly student-led interviews with an author of a relevant peer-reviewed research paper, which will be summarized and presented to classmates by applying to course content.
The Assignment

• Presentation summarizing the paper

• Engaging interactive component
  • Demo
  • Class questions

• Develop questions for researcher
  • Paper and science
  • Cultural background; academia abroad
  • Career pathway
  • Advice to students

• Contacting and interviewing the researcher
  • Virtual with video and audio
  • Written out script Q/A
  • Demonstration of protocol and devices/instruments used
• FA 2019 (MWF 3-3:50 PM)
  • 44 students
  • 11 countries
  • In-person

• SP 2020 (MWF 7:25-8:15 AM)
  • 50 students
  • 13 countries
  • Partially online (COVID-19)

• FA 2020 (MWF, AM and PM)
  • >100 students
  • 23 countries
  • Fully online
Do you speak a language other than American English?

- Native-speakers: 23% (60% Spanish)
- Non-native speakers: 5% (100% Spanish)
Identity

• Sex/gender
• Ethnic identification identified two generations back

Sex

How do you identify?

- White
- Asian
- Hispanic or Latino
- Middle Eastern
- Native Hawaiian or Pacific Islander
- Black
- Other
Travel Abroad

• About 14% of students had never traveled abroad
  • The most cited reason was “too expensive” and “too busy”
  • All but one student said they would “definitely” travel abroad in the present or future, if they could

• Of the 86% who had traveled abroad, most said they would “definitely” travel abroad again

Have you traveled outside the U.S. or Mexico?

- Never Traveled Abroad
- Traveled Abroad
Cultural Interest

What intrigues you about other cultures?
Evaluating the Interviews

Do you think the interview successfully added an aspect on culture and internationalism to our course?
- Definitely yes (79%)
- Probably yes (21%)

Most (79%) said a moderate amount or a lot

Do you feel you know more about academia or general life in the country your researcher represented?
Impact

• How did your experience with the researcher from another country impact you?
  • A lot of positive impact, growth or “slightly positive impact, growth (~90%)
    • Self-confidence
    • Teamwork
    • Independent work
    • Worldview
    • Personal cultural values and biases
    • Interactions with people from different cultures
    • Respect for other cultural, political, and/or economic systems
    • Recognition of academia/research around the world
    • Adaptability
    • Communication with peers
    • Communication with someone from another culture
Feelings about group presentations...

Before
- Indifferent
- Nervous
- Annoyed
- Looking forward to it
- Anxious
- Uncomfortable

After
- It was better than I thought it'd be
- It was just like I thought it'd be
Rewarding but not without Challenges

• Tips for incorporating student teams in STEM at a global level:
  • Start small
    • One VE shared by an entire classes versus a separate VE for each student
  • Preparation is key
  • Put more of the workload on the students
    • Scaffolded assignments
    • Teach search engine skills
  • Select asynchronous over synchronous
Take-Home

It is possible to enhance the student learning experience in STEM classrooms by incorporating internationalization through team-based presentations.

This was successfully demonstrated in the UF APK *Neuromuscular Aspects of Exercise* course conducted over multiple semesters in an in-person, hybrid, and fully online course setting.